



**33rd Workshop of the Pugwash Study Group on the
Implementation of the Chemical and Biological
Weapons Conventions: *Achieving Realistic Decisions*
at the Seventh BWC Review Conference in 2011**

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Workshop Report

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The workshop took place immediately prior to the Seventh Review Conference on the operation of the Biological Weapons Convention (BWC) in December 2011. It was attended by 57 participants, all by invitation and in their personal capacities, from 17 countries including, Australia, Canada, China, Germany, Hungary, India, Iran, Italy, Japan, New Zealand, the Russian Federation, Sweden, Switzerland, the Netherlands, the United Kingdom (UK), the United States of America (USA) and Ukraine. This report is the sole responsibility of its author, who was asked to prepare a brief account of the proceedings of the meeting in consultation with the Steering Committee. It does not necessarily reflect a consensus of the workshop as a whole, nor of the Study Group. The workshop was strictly governed by the Chatham House Rule, so reference to specific speakers is not detailed here.

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Introductory Session

Report – Developments related to the Chemical Weapons Convention

The first speaker in the session on developments related to the Chemical Weapons Convention (CWC) pointed out that the Organisation for the Prohibition of Chemical Weapons (OPCW) was going through an interesting and controversial period. In late April 2012, the CWC will celebrate its 15th Anniversary since its entry in force. Late April is also deadline for destruction of chemical weapons by declared possessors and this process of destruction has proven more difficult than first envisaged, resulting in the two biggest possessors, the US and the Russian Federation, being unable to meet the deadline. This has been openly acknowledged recently and a process of consultations is underway in order to determine the organisational response. The speaker pointed out that there was no precedent for this eventuality, and the issue has generated a number of different points of view.

The speaker said that there appeared to be a general recognition that both countries probably made miscalculations in terms of destruction deadlines and went through periods of difficulty, particularly during the 1990s. In this regard, it was noted that there was little doubt about the determination of both countries to finish the job of destruction and currently it looks as though the United States, which has been working on destruction for 14 years, will have destroyed 90% of chemical weapons by the deadline. The Russian Federation has been destroying weapons for 9 years and, in quantitative terms, has destroyed as much as the US. The speaker said that if everything proceeds as planned, the Russian Federation will have destroyed 65% by the April 2012 deadline.

Many participants in the discussions at the OPCW have expressed interest in knowing exactly when the Russian Federation and the US will be able to finish the job. The expectation was that the Russian Federation is aiming for completion by the end of 2015, however there are problems committing to a specific date because both the calculations and plans are always an estimate. The recommendations from the 2011 CWC Conference of States Parties (CSP) pushed for the maximum effort for destruction and requested the provision of further information. Unfortunately, there was a vote on this recommendation, with one country (Iran) unable to support the majority.

The speaker went on to outline some of the other challenges faced by the OPCW. It was noted that there had been significant changes in science and technology as well as in the international security scene since the Convention had opened for signature. It was considered that this led to a need for a more formal review of the Convention. The speaker said that it was intended that this review would be done in a different way from the usual five yearly Review Conferences. The new Director General of the OPCW had requested a panel of experts make recommendations for future OPCW priorities, taking into account all relevant developments in international security, the chemical industry and science and technology, consistent with the objectives of the Convention. The Advisory Panel had met four times and the 14 members produced a report that was circulated to States Parties and made available electronically¹ in mid July 2011. This made recommendations that aim at ensuring the relevance and viability of the Convention in the years and decades to come. It recognised that destruction was going to be late, but progress had been significant and had taken significant resources. Notwithstanding these delays, it was recognized that the OPCW needed to prepare for a transition from efforts primarily focused on the elimination of chemical weapons stockpiles and

¹ OPCW (2011) "Advisory Panel Submits Report to Director-General"

[http://www.opcw.org/index.php?id=242&tx_ttnews\[tt_news\]=1339&cHash=57c674954fde94404be211b262b1944d](http://www.opcw.org/index.php?id=242&tx_ttnews[tt_news]=1339&cHash=57c674954fde94404be211b262b1944d)

production facilities, to a situation in which the main task of the OPCW will be to ensure that the menace of chemical warfare and the use of toxic chemicals for hostile purposes will never reappear, and that international cooperation and assistance in the field of peaceful uses of chemistry can flourish.

The speaker noted that the CWC had been drawn up in a way that put significant resources into verification. Article VIII of the CWC stipulates that the budget must consist of two sections, one relating to administrative and other costs, and one relating to verification costs. A problem is that several governments have become accustomed to the view that the section on administrative and other costs should never be higher than the one on verification costs. However, administrative and other costs include international cooperation assistance, protection and other key activities, which play an important facilitating role. Accordingly, if this section of the budget is cut it will generate problems and limitations in what can be achieved.

The speaker went on to consider the issue of S&T, recalling that this was receiving high level attention and there had been a recommendation to strengthen the structures of the OPCW in this area as well as generating closer cooperation and cross fertilisation between the OPCW and the BWC. The speaker went on to mention Libya where it was noted that the destruction process had been interrupted due to technical problems, prior to the conflict. The new authorities in control of Libya had reported additional chemical weapons agents that had not been previously declared. The speaker suspected that when the previous government conducted its evaluation this was not declared.

The second speaker began by recalling the core objectives of the Convention: chemical demilitarisation; non-proliferation; national implementation; assistance and protection; international cooperation and universality.

- In terms of chemical demilitarisation, the speaker reiterated that possessors have declared 71.01% of category one chemical weapons destroyed. The US had reportedly destroyed almost 90% of its stockpiles and the Russian Federation had almost completed 57% of its stockpiles; whereas Libya had destroyed 54.5% of its category one weapons and 39.6% of its category two weapons, and 100% of its category three weapons. To date investigations indicate that nothing has been taken from Libyan facilities over the course of the recent internal conflict. However, it was reported that additional information was received during the Conference of States Parties (CSP) held in the previous week regarding Libya which was being addressed. The CSP had adopted a report setting out the transparency and reporting mechanisms that States Parties have to undertake. Abandoned weapons in Japan and China are also being checked.
- On the issue of non-proliferation, in 2011, OPCW completed 209 inspections and with the budget for 2012, it was proposed that there would be 219 inspections in 2012, 229 in 2013, and 241 in 2014.² The budgetary issues were considered a significant topic at the CSP with a staggered increase over the next three years in inspections of other chemical production facilities (OCPFs). The OPCW have done the necessary analysis to accommodate this increase

² OPCW (2011) " Decision: Programme and Budget of the OPCW for 2012"
http://www.opcw.org/index.php?elD=dam_frontend_push&docID=15226

and revised the selection methodology to randomly decide the location of inspections in order to make the gap between inspections shorter and geographically broader in scope. More generally, the speaker identified this as an area in which there had been a great deal of work, including seminars which looked to the future and sought to wrestle with issues such as the convergence between biology and chemistry, particularly in terms of safety and security. The OPCW had also undertaken a challenge inspection exercise hosted by Thailand, in which Australia played the role of requesting States Party.

- On the issue of national implementation, it was noted that all but two States Parties have a National Authority. 47% of States Parties had adopted legislation in all key areas suggesting that more attention was required in this area, not least as the adoption of legislation was considered likely to become a more significant issue as the States Parties move past destruction. OPCW had been providing technical assistance to help draft legislation and the African programme was renewed in 2012, thus supporting another 3 years of work on the effective implementation of the CWC across Africa.
- Regarding assistance and protection, the speaker said that the OPCW could provide training, advice and guidance in addition to which there were a number of States Parties willing to offer advice and training. The Organisation had also run exercises, such as the Assistance Exercise (ASISTEX).³ As recently as November, the United Nations Counter-Terrorism Implementation Task Force (CTITF) released a report on “Interagency Coordination in the Event of a Terrorist Attack Using Chemical or Biological Weapons and Materials”.⁴ This report pointed to the need for greater coordination and the need for more exercises between the different agencies involved. In its meeting last week, the CSP had adopted a decision supporting the idea of an international network for assistance to victims of CW.
- In terms of international cooperation under Article XI of the CWC, the speaker said that there was an associate program and other mechanisms through which to train people in certain techniques. Moreover, the November 2011 workshop on Article XI had come up with a detailed list of recommendations in terms of cooperation.⁵ These had been discussed last week when the States Parties had adopted an agreed framework on the full implementation of Article XI.
- On Universality, it was noted that there were eight states not party to the CWC. One of these, Myanmar, has indicated that it intends to ratify the CWC soon and is engaged in discussions. Other non-parties are more difficult, in part as they are located in regions suffering from strained relations, specifically the Middle East and North East Asia, although it was reported that Israel (a signatory state) remained an observer whereas Syria and Egypt (both non signatory states) had engaged with the OPCW. There had been no response from DPRK.

³ See OPCW “Wrap-up overview of ASSISTEX 3” <http://www.opcw.org/events-calendar/assistex-3/wrap-up-overview/>

⁴ United Nations Counter-Terrorism Implementation Task Force (CTITF) “Core objectives, key findings, anticipated outcomes, concrete results” <http://www.opcw.org/ctitf-report/core-objectives-key-findings-anticipated-outcomes-concrete-results/>

⁵ OPCW (2011) “Workshop on Article XI of the Chemical Weapons Convention” <http://www.opcw.org/our-work/international-cooperation/Article-xi-workshop/>

In his closing remarks, the second presenter outlined some additional developments. It was noted that the SAB had met twice in 2011 and that there were two working groups, one on sampling and analysis and a second on convergence; the chair of the latter had been taken over by Bill Kane of the United States. In addition, there was agreement to establish a third working group on education and outreach, something that the speaker noted was of definite relevance to this workshop on the BWC Review Conference.

The speaker concluded by reiterating that OPCW was entering a period of transition and there were a number of debates surrounding this transition. It was recognised the budget would be radically different, with staff reductions along the way. Nonetheless, the OPCW was preparing for the Third CWC Review Conference. As part of this, there will be an IUPAC workshop on developments in science and technology of relevance to the Convention, which will take place in February in Spiez, Switzerland, which was likely to address the issue of convergence of chemistry and biology amongst other topics.

A number of issues were raised in the subsequent discussion on developments related to the Chemical Weapons Convention. On the **temporary working group on education**, it was noted out that whilst previous work had been done on education and codes through IUPAC, there had been political constraints on setting up a CWC working group earlier. The new group has not yet met. However, participants largely agreed that it would be important to ensure that the experience from the BWC intersessional meetings on codes and education was fed into the working group's deliberations and there were suggestions for an experts-type meeting under the CWC on this topic in August.

Indeed, it was suggested that there was greater scope for moving forward with closer engagement with the meetings of the BWC States Parties in Geneva. In terms of the **convergence between biology and chemistry** one participant pointed out that the main issue was that discrete chemicals produced by biological processes could be used for chemical warfare and bioregulators could be produced by new methods. It was recognised that this could have positive implications, and that there were a number of benefits, not least in terms of protection aspects.

In terms of **science and technology under the CWC**, it was noted that there would be a new high-level scientific advisor appointed to advise the OPCW Director General (DG) on issues related to science and technology (S&T) developments. In addition to which it was said that the SAB had been moved so as to become the responsibility of the policy review branch; this had been a particular decision by the DG who sees S&T as an important issue.

The information about chemical weapons in **Libya** was also discussed with participants seeking further information, specifically in terms of the status of the newly discovered chemical agents, and whether these should be categories as 'previously undeclared' or 'newly declared'. It was pointed out that much of the information on Libya was relatively new and there was a lack of clarity on the details, which rendered in-depth assessment difficult at this stage. In this regard, it was noted that before starting to judge the situation, there was a need to assess what had happened.

On the issue of **administration type activities** it was pointed out that there was a scaled down Implementation Support Unit for the BWC in Geneva and the question of resources versus expectations faced by the OPCW was raised to inform the expectations in Geneva. From the OPCW

side, participants estimated that there were roughly 20 to 30 individuals working in each of the four branches of the Organisation. There was less clarity on exact budgets for travel or the cost of the database development, both of which were much harder to quantify. The issue of transfer was also raised and it was pointed out that, when an OPCW lab finishes with equipment, it is handed to National Authorities. This includes computer equipment, and was augmented by a voluntary funding scheme. Finally, on the issue of destruction, it was observed that countries have different methods, but sea dumping was categorically prohibited. One participant stated that safety and security issues are important in the destruction process and it makes the process very complicated.

Report – Preparatory Committee Meeting BWC 13 – 15 April 2011

The first speaker in the session on the Biological and Toxin Weapons Convention (BTWC) Preparatory Meeting began by noting some examples of activities done in preparation for the Seventh Review Convention, specifically the Montreux workshop entitled *Developing Practical Proposals for the Seventh Review Conference*. A number of points from the Co-chairs' summary produced from this workshop were highlighted before the speaker turned to the Preparatory Committee discussion. The speaker pointed out that the President Designate had introduced the provisional agenda agreed for the Seventh Review Conference, which was identical to that of the Sixth Review Conference apart from slight modifications to agenda items 11 and 12. Specifically, there was a change from 2006 language stipulating:

11. Consideration of issues identified in the review of the operation of the Convention as provided for in Article XII and any possible consensus follow-up action

12. Other matters and the question of future review of the Convention

To language for 2011 that stipulated:

11. Consideration of issues identified in the review of the operation of the Convention as provided for in its Article XII and any possible consensus follow-up action

12. Follow-up to the recommendations and decisions of the Sixth Review Conference and the question of future review of the Convention

13. Other matters

The speaker went on to say that it had been agreed to prepare eight background papers, noting that this was two more than in 2006; the additional papers being a) a document on common understandings reached by the Meetings of States Parties during the second intersessional program; and b) a document on the implementation of Article X. The first speaker concluded by noting that there had been a number of additional workshops held in, *inter alia*, Beijing, Montreux, Berlin, Manila, Clingendael, Como and Serbia in preparation for the Seventh Review Conference, pointing out that the States Parties were very well prepared for the Review Conference and that there were high expectations for the meeting.

The second speaker agreed that the preparation for the Seventh Review Conference had been good with a number of workshops around the globe. Moreover, the indications for the Review Conference were positive and the atmosphere appeared conducive for success, with some 27 advance copies of working papers submitted to the ISU and a number of proposals emerging on the key topics. He said that the Review Conference was going to be busy with a number of visitors, including NGOs and

some high level representatives – these indicated that States Parties were paying serious attention to the BWC Review Conference.

The speaker said that, having read the working papers and proposals, there were common ground and differences. These contributions and the various workshops that had taken place pointed to a number of key topics, including, in no particularly order:

- **The Intersessional process:** although there was general agreement on having some form of future intersessional process there was not yet agreement on whether we should continue with the current system or adopt some form of different approach.
- **Confidence Building Measures (CBM):** No one suggested that CBMs should be stopped; however, there had been discussion on whether, and if so, how CBMs can be modified. This was something that was much more complicated than initially expected and it remained an interesting issue.
- **Science and Technology:** there was a general sense that there should be something more regular reviews of science and technology and a number of working papers pushed for this; however, there were differences in views on how this should be done or whether this should involve outside experts. There had been extensive discussions on this issue and the speaker noted that there were a number of different opinions on this topic.
- **Implementation Support Unit (ISU):** the speaker stressed that it would be important to take a decision on the ISU, as the ISU mandate was due to expire. It was noted that the ISU had been widely appreciated and a decision was needed that linked the ISU to future activities, indeed the ISU future was dependent upon what tasks would be required under the Final Declaration of the Seventh Review Conference and the way the unit was financed.
- **Universality:** this was an important issue for States Parties to try to push and one in which there was no difference in opinions between States Parties. However, there were other factors to consider that could have implications for how to approach universalization, such as the discussion on a Middle East WMD Free Zone, which is scheduled for the future.
- **Cooperation and Assistance:** this was something that had been identified as important. In the early nineties this was less of a problem, but now it was seen as being of high importance. There had been many activities in this area but there were different views on how best to proceed in these areas.
- **Compliance and Verification:** this was identified as a more difficult area and one in which States Parties would have to see how best they could make progress. The speaker noted that he had mainly heard realistic thoughts on this topic, but consensus was required and this was something that needed to be followed carefully.

In the discussion session, a number of points were raised. One participant encouraged greater attention to the issue of **national implementation**. It was pointed out that in 2006, there had been a lot of discussion on an Action Plan for national implementation drawing from the approach of the OPCW but this was missing from the key areas identified for the Seventh Review Conference. Other participants pointed to the work of external organisations and NGOs in the area of national

implementation and questioned whether there were plans to bring national implementation “in house” to the ISU. It was said that to some extent national implementation was already a task of the ISU and that States Parties should help each other in this area.

A second area of discussion was **what would constitute success** at the Seventh Review Conference and what would be the legacy of the Conference. It was pointed out by one participant that the history of the Convention was littered with failed opportunities and missed chances, with a gulf between what was desirable and what was achievable. Others were more positive about the Convention pointing to the extent of scientific participation and input and emphasising the entirely new relationship that had developed between BWC and scientists over the last decade. The intersessional process was identified as having played a key role in this area of engagement between different communities. In terms of the legacy, whilst it was argued that this would be determined by States Parties, there are a number of areas that were identified as being demonstrative of success. These included, *inter alia*, the development of CBMs; the allocation of time during Intersessional Process to the issue of science and technology; and the provision of guidance to some form of future Intersessional Process beyond the Review Conference. One participant pointed out that whatever happens, it will be important for States Parties to be able to say why things were different and why countries should take the step of joining and/or implementing the Convention.

Interlinked with the above discussion on success, a third area of discussion was that of **science and technology**, or more specifically whether there was scope for some means of achieving greater governance of science through the BWC. It was pointed out that an appropriate balance in measures of scientific governance, such as legislation and education, was required and further activities must incorporate the views of the scientific community. Several participants pointed towards stronger action on education in this regard, with some participants calling for progress beyond the exhortations of 2006.

Achieving Realistic Decisions at the Seventh BWC Review Conference in 2011

The speaker in this session began by pointing out that there was widespread agreement on what topics would need to be addressed. The speaker elaborated on the following key areas to set the scene.

- a. **Universalization** of the Convention, it was pointed out that despite a sustained effort there remained 19 states that had neither signed nor acceded to the Convention and, whilst there has been some progress, much more was required over the next five years. To do this States Parties were encouraged to find a way of generating more sustained input. One option to achieve this could be some form of a troika bringing together the President of the Seventh Review Conference, the Chairman of the Committee of the Whole and the Chairman of the Drafting Committee, supported by ISU and Depositary States, as a means of providing sustained high level attention. A second option could be a special representative that pushed forward Universalization .
- b. **The Intersessional Process** had been a useful mechanism for sharing information and ideas on certain topics, however, the BWC needed to move forward and it would be advantageous to develop standing working groups on subjects, such as science and technology, CBMs, and compliance. Annual meetings of States Parties should be able to request these standing

working groups carry out further work. This, it was said, leads one to the view that annual meetings should have some decision-making power as appropriate and based on consensus.

- c. **National Implementation** together with Education and Outreach was an area in which the BWC needed to move forward. The speaker stated he would like to see an action plan with a target of two-thirds of States Parties adopting effective national implementation legislation by the time of the Eighth Review Conference. On education and outreach, the speaker hoped the States Parties would be able to do more than encourage and exhort at this Review Conference. Instead, States Parties should take action to implement effective education and outreach in order to make sure all scientists are aware of the BWC and its obligations.
- d. On the **Confidence-Building Measures** regime, the speaker hoped that it would be possible to agree some modifications at the Seventh Review Conference together with the establishment of a standing working group to look at how the effectiveness of the CBM regime could be enhanced.
- e. In terms of advances in **Science and Technology**, it was said that under the present arrangements science and technology were not adequately discussed. The speaker noted that developments in S&T have important implications for all Articles of the Convention and argued that it would be important to set up a standing working group on S&T open to all States Parties. It was suggested that Synthetic Biology could be a topic to address in the first year.
- f. On **International cooperation and assistance**, he recommended that States Parties should establish a clearinghouse mechanism, such as that which existed on the same topics under the Convention on Biodiversity. Another approach could be to set up a standing working group on this topic.
- g. On the issue of **compliance and demonstrating compliance**, it was said that a standing working group on compliance could be established to facilitate a conceptual discussion on what measures could demonstrate compliance and look ahead to what sort of regime will be required over the decades ahead.
- h. Finally, on the issue of the **Implementation Support Unit**, it was pointed out that the ISU had received huge praise for its work and it was recognised that the unit is currently unable to deal with all requests made upon it. The speaker recalled that the ISU have said a staff of 6 or 7 will be required to meet its existing mandate and additional staff would be needed should some of the proposed additional activities that have been flagged for discussion at the Seventh Review Conference be realised. As a minimum, the States Parties will need to agree the continuation of the ISU.

The speaker concluded by pointing out that expectations for the Seventh Review Conference have been raised and the speaker hoped that States Parties would meet the call to achieve realistic ambitions.

The presentation raised a number of areas of discussion. It was suggested that in terms of **science and technology**, overall greater advances had been made on the protective and defensive side,

through, for example, developments in prevention and therapy, or in the new realm of bioforensics. The latter was particularly important as it made the tracking of pathogens in new ways easier. This led some to conclude that, on the one hand, the risk of a state deliberately using biology as a weapon was decreasing, not least because any state doing so would have to expect retribution. On the other hand, there was a potential threat from criminals, hate groups and people with specific individual grievances, however the speaker went on to suggest that many of the key advances were not particularly useful to these sorts of groups. It was suggested that the actual situation was somewhat clouded by the media being more receptive to doom-laden prophecies and less receptive to a rational discussion on the positive aspects of science.

In this regard, several participants agreed that, whilst discussion on the negative potential of new technologies should not be overlooked, the positive aspects of new technologies should be addressed. Several participants expressed support for some form of working group on science and technology to provide a means of institutionalised assessment of S&T during the intersessional process. The intersessional process (ISP) had been extraordinarily effective in the way it enabled diplomats, law enforcement officers, scientists and others to come together to discuss issues. In this regard, the ISP could usefully enable a balanced assessment of the positive and negative implications of developments in science and technology; as well as serving as a forum for engagement on codes and ethics. It was also noted that the issue of convergence between the two Conventions (the CWC and the BWC) was receiving more and more attention in The Hague, and the States Parties should work out ways to draw in the two communities to look at common issues.

The concept of a troika to work on **universality** was also discussed. This notion received support from a number of participants as a means to keep people engaged as it would generate the expectation that something would be done. It was recognised that smaller states may not always share the same perception of threats; however, it was argued that the benefits of the BWC in terms of looking at disease had great resonance with smaller and bigger states alike. Nonetheless, it was accepted that in some cases it could be difficult to get measures through parliament and that strong rationales were needed for signing up to the BWC in this regard. One participant laid emphasis on universalization through regional and sub-regional groupings and it was suggested that it was no longer appropriate to think of the NAM as a block, but rather it was a collective of states from different regions, that had different interests. In the case of ASEAN-plus countries, there had been close engagement and a sense of working together as a regional team. This was something which should be encouraged as a means to get regions working together generally, and get neighbouring states to sign-up to the Convention specifically.

Other participants underscored the importance of the **Implementation Support Unit** in achieving universality, suggesting that if you want universalization and the other activities identified by the speakers, you really need to expand the ISU beyond the current three people. In short, it was suggested that if States Parties were serious about universality, they would need to be serious about the ISU and provide the necessary funds for the ISU expansion as well as a travel budget for staff to engage. Several participants agreed that expansion would have to be geographically representative, with others emphasising the importance of the ISU remaining under political control of the States Parties. Others said that the emerging networked model for the BWC integrated a number of different actors and expertise, and, as such, one overarching institution to control everything was less appropriate.

The issue of **compliance** was also discussed, with one participant recalling that the issue of compliance had been raised repeatedly in the series of BWC related workshops hosted by different organisations around the globe; however, the question of what constituted compliance remained unanswered and several participants emphasised a need for conceptual discussions about compliance. However, other participants suggested that the focus should be on action-orientated outcomes as opposed to philosophical discussions, stating that although they were not intrinsically against a discussion on compliance, States Parties would need to keep in mind the availability of resources and time. In this regard, the question was raised as to how States Parties could ensure sufficient time for proper discussion with action at the end of it, adding that there was a division between ideal and the achievable.

On **national implementation**, the interim objective of two-thirds of states enacting national implementation by the time of the Eighth Review Conference was debated, with one participant contending that nothing short of full implementation the Convention would be suitable as an objective. It was also suggested that the implementation of national legislation takes both time and sustained attention by senior government officials in order to make effective progress.

A. Implementation mechanisms

i. The intersessional process

The intersessional processes were outlined by one speaker who began by pointing out that there had been two intersessional processes: the first between 2003 to 2005; and the second between 2007 to 2010. The topics for these processes had been selected by the preceding Review Conference and it was suggested that the processes had been very successful in sharing information on topics. However, all decisions had been left to the next Review Conference. At the Sixth Review Conference, States Parties simply noted conclusions and endorsed the consensus outcome documents. Accordingly, the speaker suggested that it was now time to move forward and do more. In this regard, it was suggested that there would be advantages in supporting the annual meetings by standing working groups on subjects, such as on CBMs, on science and technology and on compliance. The speaker suggested that the annual Meeting of States Parties should be able to request such standing working groups carry out further work. For example, in the case of S&T, to be able to request the standing working group to consider particular topics at future meetings. Moreover, the annual Meeting of States Parties should have some decision making powers where appropriate and on the basis of consensus.

The issue of the **intersessional process** was raised in other sessions with some participants pointing out that when the mandate for the ISP was first drafted the key phrase was ‘common understanding and effective action’, recalling that this had been something of a rescue operation to salvage something from the collapse of the Ad Hoc Group negotiations. Whilst the first two ISPs have done a lot on common understanding and the generation of shared understandings on different topics - something that the participants largely agreed they would like to preserve - what had been much less satisfactory was effective action. Accordingly, what was needed was a more dynamic process that enabled a degree of decision making to facilitate effective action. It was said that such a proposal would maintain the Review Conference as the supreme decision making body with Meetings of Experts (MXs) and MSPs taking action where agreed, for example, when dealing with

Article X issues. Some other participants echoed this proposal suggesting there should be nothing stopping States Parties making decisions between Review Conferences, should there be agreement; with others elaborating on this concept and proposing that a working group could make recommendations, which would be sent to an annual meeting of States Parties, which could make decisions in discrete situations. In contrast, other participants expressed concern over radical changes in the format of the ISP and the notion of decision making outside of the Review Conference. From this perspective, it was suggested by one participant that standing agenda items, that would address national implementation; S&T; CBM amendments; and other issues, might be one approach that would preserve aspects of past intersessional processes whilst encouraging focus on key issues in the future. Decision-making was also a source of concern for some participants particularly if a group or groups were tasked with reaching decisions outside of the Review Conference forum, because, it was suggested, this could generate legal issues, adding that for some quite small States Parties participation in these groups might be difficult.

The **substance of the intersessional process** was also raised, with one participant recalling that the first ISP had been very much driven by concerns over terrorism, a factor that also served as a driver of greater engagement with scientists because the community was pressed by the terrorism discussion to do something. The participant suggested that this approach was of limited value and in future attention should be given to issues such as transparency, not just in biodefence programmes, but also in relation to scientific research taking place in academia and elsewhere.

ii. Improving the Confidence-Building Measure regime

The next session addressed the issue of Confidence Building Measures. The first speaker began by outlining how the Sixth Review Conference had resisted proposals to amend the CBMs by France and Switzerland. It had been recognised that the Seventh Review Conference needed to avoid the same outcome, and accordingly over the last three years there had been a concerted effort to discuss the CBM regime. This had been achieved through a series of workshops and subsequently an electronic exchange through an email platform discussion. However, despite this effort the speaker recognised that, in the spirit of ‘ambitious realism’, ambition and realism might need to be separated. The joint working paper tabled by Germany, Norway and Switzerland (BWC/CONF.VII/WP.9) for the Seventh Review Conference was identified as presenting a realistic approach that had emerged from the Geneva Forum meetings, which sought to engage with the individuals who would be involved in taking decisions at the Review Conference. There were proposals to agree some amendments to the CBMs at the Review Conference and to address improving the CBM regime in a future intersessional type process.

At the time of speaking, it was noted that a working paper by South Africa (BWC/CONF.VII/WP.19) stripped the proposals down and placed less of a reporting burden upon States Parties.⁶ There has also been a working paper by Belgium which proposes a CBM to provide information on Article X matters (BWC/CONF.VII/WP.6).⁷ Another issue was the availability to the public of CBMs and it was noted that currently 21 annual submissions are accessible,⁸ something which is important in creating transparency.

⁶ South Africa (2011) “Confidence-Building Measures” BWC/CONF.VII/WP.19

⁷ Belgium (2011) “Confidence-Building Measures: proposal for modification of Form D” BWC/CONF.VII/WP.6

⁸ United Nations Office at Geneva “CBM returns”

[http://www.unog.ch/80256EE600585943/\(httpPages\)/4FA4DA37A55C7966C12575780055D9E8?OpenDocument](http://www.unog.ch/80256EE600585943/(httpPages)/4FA4DA37A55C7966C12575780055D9E8?OpenDocument)

The second speaker provided an overview of how CBMs are used by States Parties. The speaker pointed out that CBMs are available in the restricted part of the ISU website; however it turned out that the number of States Parties that had accessed the restricted part of the BWC website was around 40 which was substantially less than the number of States Parties to the Convention and even less than the number of states who had submitted CBMs. The second speaker went on to look at how CBMs were used, pointing out that there is very little public information about what information in the CBM is used or how. The speaker suggested that CBMs have a number of utilities and provided several examples. One State Party produced an annual compliance report and information in other States Parties CBMs was used explicitly in that report. Another less formal and less public use of CBMs was as a component of compliance assessment. Other States Parties used CBMs as a means of keeping on top of national implementation related activities, thus the CBM was used as a way of seeing what is going on in other countries and identifying gaps in legislative requirements domestically. Yet other States Parties used other countries CBMs as a model for filling in their own CBMs. It was suggested the ISU used CBMs as a means of updating information on the state of national implementation. Based on the analysis conducted, the speaker developed a number of recommendations, and highlighted one: the idea of developing a CBM working group to take discussions forward during a future ISP. This group, it was suggested, would be tasked with more than enhancing the effectiveness of the current system, but rather should look at the bigger picture of how the CBM regime fits in with compliance assessment.

The third speaker outlined a number of conceptual ideas for the Intersessional Process related to the CBMs. The speaker began by pointing out that there are two key criticisms of CBMs, the first is that of low participation and it was stressed that participation remains at around 46%. The second issue was the types of data that were acquired under the CBMs and the speaker included a plea that the focus should remain on topics of high relevance to the Convention, such as misuse of research; any work on biodefence; and any work on aerosols. In addition, it was suggested that contextual information would be important, such as providing a basic understanding of BSL facilities and the ability to mass produce agents. Focusing on these topics (rather than areas such as national implementation and Article X), it was argued, would enable clarity in other areas, particularly if such topics were subsequently discussed internally at the national level in a manner which brought in the NGO community, as is the case in Germany where there is a biannual exchange on, *inter alia*, aspects of the German biodefence program. Alternatively, these sorts of topics could be used by civil society to conduct an assessment, as has been done in the BWPP Monitor in 2010 and 2011.⁹ The speaker concluded by proposing that the Review Conference should make CBMs publically available unless there was a request otherwise. The transparency this would generate might have a positive effect as, it was suggested, States Parties sometimes need a little push to get their CBMs prepared and Civil Society could ask questions that could contribute to that push.

The discussion on CBMs raised a number of issues and touched upon the historical objectives of CBMs; some of the limitations and shortcomings with the current process; and potential mechanisms to rectify the limitations with the current process. In terms of the **history of CBMs**, one participant reminded the group that CBMs were established at the Second Review Conference in order to prevent or reduce the occurrence of ambiguities, doubts and suspicion and to improve international cooperation in biological activities. The participant thus suggested that there are two

⁹ BWPP (2011) "BioWeapons Monitor 2011" <http://www.bwpp.org/documents/BWM%202011%20WEB.pdf>

pillars: the first related to confidence, the second dealt with the promotion of cooperation. The participant argued that the second pillar had not been given due attention, and that there was a need to address this in greater detail. Other participants contested this reading of the history of CBMs, with one participant pointing out that in 1992 the States Parties began with the VEREX process, which took attention from CBMs because of the discussion on the importance of declarations under the Protocol. It was suggested that with the collapse of the Protocol negotiations came a shift in the orientation of agenda items and, in the absence of other transparency measures, the confidence-orientated pillar of CBMs became more important.

Another participant suggested that CBMs actually predate the Second Review Conference and could be traced back in time to 1979 and the Sverdlovsk episode, which was an issue in 1980. By 1986, the primary reason for CBM forms A and B was a perceived need to firstly, declare laboratories; and secondly, provide a mechanism for transparency and the demonstration of compliance through transparency, whereas CBM forms C and D were about reassuring States Parties. By the time of the Ad Hoc Group, it was realised that transparency required declarations. The participant went on to argue that States Parties should not get distracted with a theological discussion on CBMs and instead recognise that they remained the best mechanism to build transparency in the current context. Others countered this idea, recalling there was a rich discussion in the 1990s on strengthening the Convention that discussed a number of tools that could be considered again in the future, adding that, CBMs should not be considered the only tool available to States Parties.

In terms of the **limitations in CBMs**, one participant suggested there were a lack of incentives to participate and the process should be made more practical to ensure that States Parties get something out of their participation. Others queried whether the lack of participation related to incentives, arguing that CBMs should be viewed as a unilateral demonstration of compliance with the Convention.

In relation to **efforts to improve CBMs**, it was suggested by one participant that there was currently a shift to try and use CBMs for as a substitute for efforts to achieve verification. Verification was something that, one participant argued, must be raised and there were limits to what could be done with CBMs without changing the nature of the measures from a CBM to a Declaration, suggesting that the wording was very delicate. Other participants raised the possibility of shifting from a red-green system to green-red approach whereby CBMs would be made public unless States Parties requested otherwise. Alternatively, it was suggested that a more step-by-step approach to CBMs could be useful in which some forms were made available publicly with others subject to restricted access. This could be useful as some CBMs form lend themselves more easily to being publicly available, thus states could provide some forms openly and others restricted. Other approaches to confidence building were also raised, beginning with an elaboration on the German Biodefence Conference. It was noted that this meeting had been taking place in the 1990s and involved national and international participants in a discussion between government and other stakeholders. At the most recent meeting 50 people from 35 States participated in what remains the only conference of its kind.

iii. The Implementation Support Unit (ISU)

The first speaker in this session began by reiterating that the Implementation Support Unit had received universal praise. However, its mandate and existence cease at the Seventh Review

Conference unless States Parties are able to agree its continuation. Continuity was argued to be important and the speaker suggested the unit should be mandated to support the tasks set out in the Final Document. The speaker suggested it was important to recognize the relevance and value of close liaison with OPCW and with UNODA (New York) and consider both the issue of staffing as well as budget. Consideration of staffing and budget was identified as being particularly important and it was pointed out by the speaker that the currently staffing levels remained limited to the extent that the ISU was currently unable to accept between one-third and one-half of the requests it received to assist States Parties. Should States Parties require the ISU to carry out additional duties, such as maintaining a clearinghouse for cooperation and assistance, additional staff would be required. The speaker concluded by reiterating the importance of this resource for the BWC and suggested that realistically, States Parties should be looking towards a total of 10 to 20 staff.

The presentation stimulated an interesting debate on the ISU in which a number of participants reiterated support for the ISU and raised a number of other issues including staff numbers versus expectations; flexibility and the ISU mandate; funding; the establishment of a formalised institution; geographical representation; and the core competencies of the ISU.

Several participants recognised the time demands on the ISU and the corresponding need for more **staff**, particularly if there was an expectation that the ISU should be able to sustain campaigns to promote universality, improve CBMs, enhance national implementation, and increase cooperation and assistance. Others raised the suitability of the ISU to work on some of these issues, such as national implementation, pointing out that whilst the ISU could contribute to administrative tasks, such as the development of databases, working on implementation might be less appropriate. Moreover, one participant pointed out that NGOs have an established toolbox as well as experience in working on these issues. Accordingly, the participant questioned whether States Parties should seek the imprint of the UN on the work of national implementation, adding that this would mean expensive staff, the recreation of models of implementation and a new process of outreach. The participant suggested that such a model was unlikely to ever be as flexible as some of the current NGO work, which provided a one-stop shop for national implementation in the bio-context, as well as for chemical weapons and nuclear related legislation. Related to this point, some participants also expressed concerns over extending the mandate of the ISU too much, pointing out how the current system provided a degree of flexibility and suggesting that if the mandate was changed too much it could have potentially negative implications for the ISU's flexibility. It was recognised that, from a practical perspective, agreement on the tasks that required attention in the future would very much determine the role of the ISU.

Whilst there had been widespread support for the **expansion of the ISU** in the various workshops on the BWC, there was less evidence of on-the-record commitments by States Parties in support of expansion of the ISU and it was pointed out that with the ISU – as with other areas – there was a distinction between the ideal and the achievable. This was particularly acute in terms of the financing of the ISU and it was pointed out that in other arms control agreements spending had been cut, for example, there had been a 5% reduction in OPCW budget, which had been frozen for five years at least, so in real terms the OPCW budget was expected to drop by 15%. Despite these observations, one participant suggested the costs of a modest ISU expansion were relatively small.

Another participant pointed to some of the challenges of expanding the ISU, suggesting that adding three people could effectively be presented as doubling the ISU, which could generate concern. Even bigger numbers could generate managerial problems that did not apply to the current small, flexible set up. In this regard, it was suggested that the addition of two persons may be more realistic - thus making a total of five persons. This could be supported by EU joint action funding and participants were reminded that the EU was collectively the biggest funder, although in many cases the EU funded activities not linked to regular budgets. Other participants proposed expanding the biological-related expertise in the UN Office of Disarmament Affairs, which, it was pointed out hosts the ISU although the ISU remains separate, reporting to the States Parties. Yet others still, suggested that the ISU remained an interim measure or a “band aid approach to the BWC”, with some suggesting that States Parties should aspire to either establish some form of permanent institutional structure or alternatively provide greater political backing to the ISU. Whatever approach was favoured it was agreed that further expansion must take into consideration geographical representation.

In the final session of the first day, participants watched a video of the OPCW’s Challenge Inspection Exercise in 2011. This video is publicly available from YouTube and can be accessed through [this link](#).

iv. Improving education awareness and outreach

The first speaker in the session on improving education awareness and outreach began by outlining some of the past activities undertaken in relation to dual use education. The speaker drew specific attention to the US National Academy of Sciences Warsaw workshop on Dual Use Education in 2009 and some of the conclusions from this meeting, which recommended that dual-use education needed to be embedded in the life science curriculum around the world. It was said that there was a real opportunity to frame dual use as part of a broader contemporaneous discussion on social responsibility and science. The speaker said there was growing international recognition of the need to promote security issues and recognition that existing culture needs to be strengthened and made more active. The increasingly active discussion on professional responsibility in science offered a suitable place to slot security related discussion into and should be done in a manner in which science and scientists are framed as part of the solution not the problem. The speaker pointed to a number of initiatives from scientific community and governments, suggested the former were particularly important, before reiterating the importance of dual use biosecurity becoming a part of the broader discussion on science responsibility, something which could be reinforced with complementary focused efforts and materials that were more BWC specific. The speaker concluded by stating that the intersessional processes had been important in engaging the scientific community and it was hoped that whatever the outcome of the Review Conference, there would continue to be opportunities for engagement between the security and scientific communities.

The second speaker presented an analysis of dual use education opportunities and survey results, specifically pointing to information on attitudes and opinions of scientists. The speaker outlined some of the lessons learned from these initiatives, drawing specific attention to three issues as being particularly important: firstly, ensuring adequate balance of security concerns and freedom of research; secondly, tailoring materials to local contexts and requirements; and thirdly, taking into consideration the issue of terminology, particularly when working across different languages. The speaker then underlined the importance of ensuring sustainability in educational initiatives, before proposing concrete actions that could be considered at the Review Conference, specifically:

integrating education as a crosscutting topic in the ISP and developing a BWC education and outreach action plan.

The third speaker pointed to how States Parties have repeatedly underscored the fundamental role of education in strengthening the BWC, something most recently evidenced in the jointly authored working paper [BWC/CONF.VII/WP.20] on this topic, which included the experience of a number of countries from a wide range of regional groups under the BWC. It was suggested that States Parties to the BWC are now in a better position to move forward having demonstrated that education is possible and can be achieved at relatively little cost. The speaker went on to identify a number of actions that could be undertaken to achieve specific objectives, as well as presenting additional mechanism through which education could be taken forward, including the use of CBMs to report educational activities and the integration of education into a future intersessional process discussion on Science and Technology (S&T).

The session on education generated a lively discussion covering a number of issues related to education and awareness raising; as well as several related topics, specifically whistle blowing and publications. On the issue of **education and awareness**, firstly, there was some debate as to how best to approach this issue at the Review Conference and what bundle of activity this could best be integrated within. From a practical perspective, it was suggested that the topic was most closely aligned with science and technology; however, some participants felt that monitoring educational activities would be better transferred to some form of national implementation working group as a means to follow who was doing what, where and how. Others suggested there was a link between legislation and education, in that States Parties need to educate scientists as well as enacting national legislation and it was suggested that this might become easier with the Bologna process seeking to make academic standards more comparable.

A second issue that was raised was whether education type activities should be **voluntary or mandatory**, one participant proposed that at least some of these sort of activities should be mandatory, adding that scientists could have a code which they must sign and adhere to. However, it was argued that mandatory approaches could be more difficult to implement. A third issue related to the activities of the OPCW, and it was pointed out that the OPCW recently agreed to establish a working group on this topic and that there could be a role for exchanging ideas at different levels in this regard, including through scientist exchanges. However, other participants suggested that the extent of awareness of dual use issues amongst chemists was likely to be the same as with biologists, adding that it would be unlikely that chemists would be familiar with the CWC. Nonetheless, several participants recognised that linking the activities in this area under the BWC with those in the CWC would be a useful process.

Thirdly, there were a number of proposals identified for **promoting education in the future**. One participant pointed to the role of social media in promoting education and outreach to a younger audience. Another participant suggested there could be scope for approaching Chief Scientific Advisers or Ministers and their equivalents on this issue in the hope they could drive things forward at the national level through contacting universities. Another participant raised the issue of whistle blowing, and it was suggested that creating a mechanism to facilitate whistle blowing could be considered a national duty.

In an additional presentation in this session, a fourth speaker spoke on some of the institutional challenges that arose following the US Anthrax Letters Attacks and the subsequent investigation. The speaker began with some information on U.S. Army Medical Research Institute of Infectious Diseases (USAMRIID), pointing out that the institution had had a more peacefully orientated public health role in its early days. However, events in 1979, specifically the Sverdlovsk outbreak, affected the nature of the work. It was during this period that Bruce Ivins arrived at USAMRIID after being hired to work on anthrax.

The speaker outlined aspects of the investigation into the Anthrax Letter Attacks pointing out that, the contents of the September 2001 mailing were brought to USAMRIID for investigation where it was identified as being the Ames strain, a variant that, since 1992 has primarily been studied at USAMRIID Fort Detrick. The speaker said that rather than the FBI taking a step back to identify a broad pool of potential suspects that would have included those working on Anthrax in Fort Detrick, the FBI had succumbed to what the speaker described as 'institutional blindness' and failed to fully consider an insider threat. This was rectified only later in the investigation.

The speaker noted that the event raised the question of accountability in the event of a disaster, saying that in this case, something had gone wrong in terms of judging who the insider was. The speaker went on to suggest that the event raised the issue of institutional values and process in place within USAMRIID. In this regard, the speaker suggested it was remarkable that USAMRIID appeared to have ignored or not employed personnel reliability screening of persons working with dangerous pathogens; instead, there was a misplaced sense of presumed patriotism and loyalty. Finally, the speaker raised the broader issue of a criminal investigation in conditions in which institutional blindness had prevailed and reiterated that it had taken the FBI years to ask the army the tough questions that were required, and only then was this done as a result of the scientific contribution to the evidence.

The presentation raised a number of issues. One participant noted that it is hard to identify mental problems and the regulations make it difficult to gain access to medical records, a process that complicates the extent to which an individual's mental health can be monitored. Another participant noted that Ivins had, in fact, signed a waiver giving the Army access to his medical records but that USAMRIID authorities had apparently not considered him to be safety or security risk. The speaker said that Ivins' medical records were clearly indicative of mental difficulties. It was also suggested that **personnel reliability** programs can never be 100% foolproof and there is always a human element to their implementation. However, other participants pointed out that security vetting for work in nuclear programmes was required in the US, suggesting vetting would be possible to some extent and, as one participant pointed out, a presumption that bio was not that much of a threat compared to nuclear, a situation which suggests a disconnect in security policies. Another participant noted that the clearance procedure is meant primarily to protect secrets and that information about nuclear weapons is generally kept secret while much work on select agents is not secret and therefore has not required security clearance. Other participants indicated that aspects of the evidence are not enough alone to establish a conviction, and there is a need to establish a connection between the materials and access. Another participant pointed to a parallel experience dealing with public concerns over animal testing in the UK in which the response was to operate in a manner which was whiter than white. The participant expressed hope that USAMRIID would establish records of who has access to strains and therefore, should there be a similar incident it

would be possible to immediately identify the team who worked on any specific strain. Other participants raised the issue of maintaining reliability and oversight on an individual basis and questioned what should have been done to identify problems earlier.

In a summary response, the speaker indicated that the case against Ivins remains subject to a number of questions and has been subjected to a great deal of disinformation and uncertainty which had been compounded by several reports on this topic that had a political back story. The speaker's personal sense was that the match between the morphological signature of the spores in the flask maintained by Ivins and the signature of the spores in the letters, together with other aspects of the FBI charge would have made a strong case to go to trial. More significantly though, were the institutional failings and the fact the US Army never accepted responsibility with much of the blame being directed towards the FBI's investigative failures. This buried an important aspect of accountability for an event that affected not just the five victims who died and their families, but also shut down government in what is one of the few major acts of bioterrorism. In addition to the deaths, it has had profound implications in terms of biosecurity and bioterrorism thinking and much of the interest of industry, government and academia can probably be traced back to these letters. A further result of the FBI investigation, of great potential value, was the development of greatly improved forensic technologies.

B. Enduring challenges to the Convention

i. Advances in Science and Technology relevant to the Convention

The first speaker in the session on science and technology suggested that the advance of science and technology and the immensity and complexity of the knowledge gained through this process had rendered this topic both incredibly complex and of critical importance given some of the risks involved. The challenge was compounded by the absence of adequate compliance assurance mechanisms and a lag in the development and implementation of oversight mechanisms and educational programs.

The speaker proceeded to illustrate this point through the research on Bird Flu, citing Ron Fouchier, the head of the group based at the Erasmus Medical Center in Rotterdam that had been leading the research in Europe as stating that "this is probably one of the most dangerous viruses you can make". The speaker went on to highlight key areas of potential concern which included targeted delivery systems; synthetic biology; systems biology; genomics; bioinformatics and computational biology. These examples led to a number of biosecurity concerns, particularly in terms of state-supported actors, and underscored a need for a new process of assessing and dealing with the advances in science and technology.

The speaker went on to highlight some of the remarks made by other scholars in this field, suggesting that the incremental approach had reached the end of its useful life. Subsequently, the speaker outlined some of the calls for improving the review of S&T developments at the Seventh BWC Review Conference referring to the papers submitted by the States Parties containing calls for a new S&T assessment process and the different perspectives on the issues of frequency of assessment, the type of assessment body, and items to be covered by the S&T review group. The speaker suggested that these papers reflected an increased concern about the risks such developments pose in regard to biological weapons and the necessity of dealing with these in a more analytical, systematic way. The speaker concluded by looking at some of the similarities and

differences evident in these papers and suggested there were a lot of good ideas to help improve the consideration of S&T advances specifically through the development of a working group. Such a group should be composed of government experts, scientists from civil society institutions and industry to carry out a structured, systematic and analytical review of S&T developments of relevance to the Convention. Such a group, the speaker proposed should meet at least once a year, but maintain the flexibility of meeting more often if deemed necessary. It was suggested that a Facilitator to chair the working group should be chosen by a regional group and supported by Deputies, to be selected by other regional groups. Such an approach could help with reviewing S&T as well as dealing with implementation and oversight, education and awareness raising. In terms of the latter, the speaker concluded by proposing that one approach would be to agree that States Parties provide annual reports on the steps they have taken nationally to improve education and oversight of work in the life sciences, for example as a part of their submissions under CBM E.

The second speaker highlighted some of the key themes to emerge from a 3-day Workshop on *Trends in Science and Technology Relevant to the Biological Weapons Convention*, held in November 2010, hosted by the Chinese Academy of Sciences in Beijing. The speaker drew specific attention to three key findings highlighted in the report produced by the National Academy of Sciences:¹⁰

- The continuing rapid pace of change in which life sciences research is advancing very rapidly and will continue to do so. The speaker drew particular attention to the rapid increase in availability and power of enabling technologies such as computing and high throughput analysis that underpin life sciences research
- Diffusion of life sciences research and capacity in which there was an ever larger number of international collaborations and globalization of scientific culture which brought in life science researchers outside of traditional research institutions
- The increasing integration and convergence of life science in which modern life sciences research is multidisciplinary and integrative resulting in a degree of diversity in the fields of research of relevance to the future of the BWC.

The speaker went on to highlight a number of examples, such as developments in immunology and advances in biosensors for detection and diagnosis. The latter, it was argued, provided an example of the positive implications of developments in Science and Technology for the Convention as it had potential for improved response to events, although it was recognized that there were limitations to be overcome regarding specificity, integration, speed, etc.

The speaker went on to discuss some of implications for the Convention that were identified in the report including the finding that nothing had been identified as being outside scope of Article I. It was also noted that S&T developments and trends affect several Articles of BWC. This underlined the importance of continuing to evaluate advances in S&T and a number of issues surrounding such an evaluation were identified including the relationship such reviews would have with international scientific organizations, and the roles of scientists from academia, industry, and government.

¹⁰ National Academies of Science [US] (2011) "Life Sciences and Related Fields: Trends Relevant to the Biological Weapons Convention" http://www.nap.edu/catalog.php?record_id=13130

The third speaker began with an overview of one case study technology, that of vaccine production technologies, which was used to illustrate the global distribution of some life science technologies and the extent of transnational co-authorship in certain areas. This reinforced the point that many aspects of science and technology of relevance to the Convention are: globally, if unevenly, distributed; increasingly collaborative; and increasingly interconnected, in the sense that a development in one region can have implications for another region. The speaker agreed that in terms of the BWC, it was clear that developments in S&T have positive and negative implications for a number of different Articles of the Convention; but also affect some of the existing process that occur under the Convention, such as transparency measures, which were influenced by the scientific landscape and trends in research and development. The speaker suggested that as S&T was pervasive in many aspects of the Convention this made monitoring S&T so important, something reflected in the large number of states that have over time referred to the need to do something in relation to S&T reviews, although exactly what remained unclear. The speaker said that if States parties were serious about doing something on science and technology there were a number of points to consider:

- **Why bother.** It was pointed out that there were various perceptions of why S&T reviews should be conducted. The most frequently cited objective of the process was to “keep abreast of developments in order to avoid the misuse of microorganisms, pathogens and other S&T developments”; however, there were a number of other views including the implications of S&T developments for education, national implementation or Article X.
- **Frequency.** Whilst it was accepted that the Review Conference five yearly S&T review process should continue, it was recognised that there was agreement that more frequent reviews are needed.
- **Process.** A frequently mentioned model of S&T advice was the CWC’s Scientific Advisory Board (SAB). However, a direct transfer of this model into the BWC context was rejected by participants because of structural differences and there was much greater support in the BWC context for a group open to all States Parties.
- **Substance.** There appeared to be support for looking at a different subject each year; this could topical (synthetic biology, nano, neuro) or could be thematic, for example, looking at science and technology relating to attribution (including forensics); science and technology relating to protection;
- **Who.** There was strong support for the idea that external participation from the scientific and industrial communities would be important, although less clarity in how this could be achieved and funded.

The speaker then drew attention to a number of other points to consider including: leadership and having an individual to frame and focus discussion; the limitations of consensus – in scientific discussions; the difficulty of communicating science to policy makers; and the role of recommendations. The speaker concluded by stating that enhancing the S&T review process is something that is innocuous, doable and valuable. It was argued that at the Review Conference, it would not be necessary to decide the minutiae, but it would be important to think through the basics and ensure that whatever is agreed sets the Convention off on the right track.

The fourth speaker presented a number of ideas as to how States Parties might structure the consideration of science and technology evaluations in the future. The speaker proposed that S&T-related activity was important and would serve to maintain and strengthen the capacity of the regime to recognize and respond to possible compliance concern, and would simultaneously enhance economic cooperation and development. The speaker then underlined the importance of achieving a greater common understanding on the scope and nature of S&T reviews from a variety of contexts including: firstly, the broader national security context, which, whilst outside the BWC focus *per se*, could nonetheless include whistle blower mechanisms and a broader discussion on legal review mechanisms associated with program activity. Secondly, a review of the economic cooperation and development context. Thirdly, looking at the methodologies used in the awarding of patents and the secrecy policies associated with some categories of patents. A fourth basket could consist of methodologies for the assessment of scientific training and research in the life sciences and associated enabling technologies. Applied to BWC as a whole, looking into these areas could provide some basis for discussion, rather than developing a laundry list of topics for an intersessional process which should be avoided, and add some structure and direction on S&T.

The discussion on science and technology raised a number of different issues including a discussion on the recent bird flu experiments and the broader issue of research oversight as well as some of the challenges and potentials for reviewing S&T in the BWC and the role of external actors, particularly industry and the scientific community in reviewing S&T. On the issue of the **bird flu experiments**, it was pointed out that one of the research experiments was carried out at research institutes within the Netherlands, a country that had taken a lead on issues such as codes of conduct. Accordingly, one participant questioned whether these measures needed to be reinforced by education and awareness raising prior to the development of codes and whether governments had a responsibility to deal with these issues under Article IV of the BWC. Others suggested that aspects of this research were important and it could be argued that the risks were actually acceptable if the results yielded valuable insights for public health reasons. In contrast, others suggested the experiment could create both a roadmap for weapons development and a small reservoir of materials that could be leaked or stolen. Yet others still pointed to the challenges the experiment raises in terms of sensationalised news reporting and the difficulties this generated in terms of communicating scientific issues to the public, adding that an evaluation became much more difficult in the absence of scientific literacy. The view was expressed that only by properly safeguarded scientific investigation of dangerous pathogens can we develop diagnostics and therapies against potentially devastating pandemics whether of natural or unnatural occurrence.

On the topic of **oversight**, one participant raised a conceptual query over what was understood by oversight suggesting this has a number of meanings depending on who is doing the overseeing and whether it is applied institutionally or otherwise. It was suggested that the BWC had a role to play in the oversight discussion but to achieve this, States Parties would need to find a way to open doors to participation from a broad range of civil society actors. It was pointed out that in some countries such as the UK, there were procedures in place which necessitated oversight was applied at all stages from the beginning of the project through the process of execution and up to the point of publication, and that this was facilitated by a set of general principles that researchers at least those working on UK Ministry of Defence projects, were required to address. The participant went on to suggest that this was an issue that could be dealt with as part of an S&T panel discussion.

The issue of **reviewing S&T** at the Review Conference and beyond was also raised with several participants drawing attention to some of the challenges in S&T reviews under the Convention highlighting specifically how there were clear limitations on what could be expected of a three-week exercise involving policy makers. In this regard, others suggested a simplified approach might be required to facilitate the engagement of policy makers with these issues. In terms of options and proposals, it was agreed that the Review Conference should aim to do something more frequently, with some participants laying emphasis on the development of an open-ended body to look at S&T rather than a static model. The issue of participation was also raised and led to a discussion of how States Parties could best work with the scientific community in the framework of the BWC. On the one hand, some participants considered that there were limits to the extent that scientists could be involved in the political aspects of the discussions on the implications for the Convention, particularly in circumstances where there would be decision making. On the other hand, a number of participants explicitly supported working more closely with the scientific community and industry representatives, not least because these actors were best placed to determine what is going to happen in the future. In this regard, it was suggested that there was a need to find a way to have open doors and participation from a broad range of civil society.

ii. International cooperation.

The first speaker in the session on international cooperation began by recalling language from the 2006 Final Declaration in which:

48. The Conference reaffirms that existing institutional ways and means of ensuring multilateral cooperation among all States Parties need to be developed further in order to promote international cooperation for peaceful uses in areas relevant to the Convention, including such areas as medicine, public health, agriculture and the environment.

The speaker then proceeded to draw attention to the NAM working paper (BWC/CONF.VII/WP.26), which sought the establishment of a mechanism for the full implementation of Article X.¹¹ The speaker went on to highlight how the 2009 Meeting of States Parties had reaffirmed the role the ISU could play as a clearing-house for information on needs for, and sources of, assistance and cooperation. This was in line with earlier proposals that drew attention to the role of a clearing house under the Cartagena Protocol on Biosafety, and, it was suggested that this could most effectively be achieved through a two-stage mechanism. This would consist, firstly, of a database developed by the ISU for requests and offers of assistance; and secondly, an open-ended working group that would meet for one day during the annual Meeting of Experts to receive a report from the ISU on the database and briefings by States Parties on cooperation. It was suggested that an ISU clearing house mechanism would be an effective step forward, particularly if coupled with annual reports by ISU, which could be discussed and considered in an annual Meeting of States Parties.

The second speaker spoke on the evolution of international cooperation in relation to national implementation. The speaker identified a number of assistance packages used by the IAEA and the OPCW and pointed out that these providers of assistance often operated in situations in which legislation for chemical, biological and nuclear issues remained separate. In this regard, one approach could be to encourage greater coordination between the different spheres. The speaker

¹¹ Cuba on behalf of the NAM (2011) "The establishment of a mechanism to promote the full effective and non-discriminatory implementation of Article X of the Convention", BWC/CONF.VII/WP.26

pointed out that organisations such as VERTIC, which had been working with the OSCE, the EU CBRN Centres of Excellence and the UNSC Resolution 1540 committee, were seeking to expand and move into other areas, thus approaching the legislative side of national implementation in a more coordinated manner. This was a result of some states indicating that they wished to implement legislation on all areas at once; an approach which, the speaker suggested, made a lot of sense, particularly with smaller countries. The speaker thus proposed that there could be an evolution towards a more comprehensive approach to the provision assistance. This was not something that could readily be achieved by organisations such as IAEA or the OPCW because of the limitations within their mandate which preclude working on several different areas. Nonetheless, it should not be seen as a barrier to a broader approach to CBRN legislation where and when appropriate.

The final speaker in this session began by pointing to the historical disparity in the attention that had been given to a compliance regime on the one hand, and the attention given to international cooperation and assistance on the other suggesting the former had had more attention than the latter. It was said that Article X had been given limited attention up until the VEREX era; but had received more attention since the inception of work in the Ad Hoc Group. The speaker cited scholarly work on this issue that pointed to how the Article X discussion has been ‘justicized’¹² and moving forward with the discussion would be important. To achieve this there were both conceptual and practical issues that needed to be addressed. In terms of conceptual issues a number of factors needed to be recognised. Firstly, that the BWC is primarily a disarmament treaty and not a development treaty; secondly, that there needs to be an appropriate balance between disarmament and development so that countries in need of technology can obtain this from countries with technology. Thirdly, striking the right balance will ensure that the BWC offers incentives for States Parties to participate even if BW is not regarded as a serious threat; and fourthly, there is already a considerable amount of scientific and technical cooperation and sizeable development assistance aid.

In terms of practical issues it was suggested that there was a need to identify what should be addressed under technical cooperation in the BWC context, and specifically what this should include: national implementation; customs controls; biosafety/biosecurity; disease surveillance, or the life sciences more generally. The speaker concluded by noting that there were practical developments such as databases, which would be uncontroversial yet help to improve the development angle. The speaker then identified some areas where cooperation could be more forthcoming, such as cooperation in terms of national implementation, disease surveillance or on customs related issues; but acknowledged that others areas could be more difficult. Nonetheless, the speaker concluded the difficulties involved should not detract from dealing with Article X related issues as this would inevitably form part of the discussion and getting seriously involved in the debate was most important in order to facilitate the implementation of Article X.

In the discussion on international cooperation, it was suggested that such a holistic approach to legislation that covered CBR and N could be suited to some countries. It was pointed out that cooperation on implementation remained different to the issue of cooperation in terms of **Article X**. Whilst both were important, participants recognised that the latter point was going to be an issue at the Review Conference. Indeed, although it was suggested that there had been a great deal of

¹² Becker-Jakob. U (2011) “Notions of Justice in the Biological Weapons Control Regime”
[http://www.unog.ch/80256EDD006B8954/\(httpAssets\)/9A0D5A3B4B020EC3C1257944003A61EE/\\$file/BWC+%26+Justice.pdf](http://www.unog.ch/80256EDD006B8954/(httpAssets)/9A0D5A3B4B020EC3C1257944003A61EE/$file/BWC+%26+Justice.pdf)

international cooperation, there was less evidence of how Article X could be addressed at the Review Conference. Two specific proposals were discussed: the first was the notion of a clearing house, which was generally accepted as one practical step that could be pursued. In addition, it was recalled that the NAM paper (BWC/CONF.VII/WP.26) on *the establishment of a mechanism to promote the full effective and non-discriminatory implementation of Article X of the Convention*,¹³ proposed inter alia, the establishment of:

... a mechanism that would allow States Parties to facilitate the broadest possible transfer and exchange of materials and scientific and technological information regarding the use of bacteriological (biological) and toxin agents for peaceful purposes, as well as exercise the right to participate in these exchanges ...

It was suggested that the establishment of such a mechanism would provide a non-discriminatory procedure for transfers and facilitate the resolution of disputes under Article X, particularly in the case of a transfer denial. This proposal generated a number of comments, and it was pointed out that Article X does not include the word transfer with another participant cautioning against the politicisation of export denials, suggesting that it would be more constructive to focus on how best to do cooperation.

Other participants drew attention to **Article VII**, suggesting there was an linkage between Article X and Article VII, although the latter was more orientated towards capacity building, it was something which required further attention. Another area of discussion noted the approaches taken towards cooperation in the CWC arena, where it was pointed out that there was a growing willingness to engage with this issue. Moreover, the CSP had recently agreed a decision on components of an agreed framework for Article XI of the CWC, alongside a process of enhancing databases and clearing houses.

iii. Demonstrating compliance and developing confidence in compliance

The first speaker opened the session on demonstrating compliance and developing confidence in compliance, by reiterating previous agreements in which States Parties stressed the importance of consultation in this area. The speaker suggested that successive workshops in the run up to the Seventh Review Conference in, *inter alia*, Beijing, Montreux, Berlin, Manila and Clingendael, indicated that there is broad consensus around compliance as being one of the issues to address. One specific idea was identified as emerging from the Montreux workshop, which was to have a Compliance working group that would report to the annual Meetings of States Parties during the intersessional period from 2011 to 2016. The speaker suggested that such a working group would need to have a conceptual discussion about enhanced mechanisms to enable each State Party to demonstrate compliance with the Convention, and also to improve confidence that other States Parties are in compliance. The group could review the significant changes in the world since the 1990s and look ahead to 2020 so as to identify and examine what sort of mechanisms should be in place by that stage to build confidence in compliance. This, it was suggested, could be followed by a piecemeal approach in which different elements of compliance monitoring might be evaluated experimentally by States Parties. The speaker then emphasised the importance of keeping separate

¹³ NAM (2011) "The establishment of a mechanism to promote the full effective and non-discriminatory implementation of Article X of the Convention"
[http://www.unog.ch/80256EDD006B8954/%28httpAssets%29/551A8A36FB2ABC1FC12579560038BBAC/\\$file/NAM+Article+X+paper.pdf](http://www.unog.ch/80256EDD006B8954/%28httpAssets%29/551A8A36FB2ABC1FC12579560038BBAC/$file/NAM+Article+X+paper.pdf)

considerations, on the one hand, of how the existing CBM regime can be strengthened and enhanced and, on the other hand, how compliance could be demonstrated and confidence in compliance developed. The proposal made by Australia, Japan and New Zealand¹⁴(BWC/CONF.VII/WP.11) for a separate standing working group to address compliance issues was identified as a significant, sensible and measured step forward in this regard.

The next speaker spoke on the issue of compliance and the development of oversight regimes and began with an overview of the US context. It was stated that in the last fiscal year funding was distributed to a large number of groups and subject to a number of different compliance oversight regimes run by *inter alia* the military, the Department of Homeland Security and the intelligence community which in turn had a number of sub-regimes. These systems vary from agency to agency and remain compartmentalised with a lack of harmonisation and the specifics of institutional procedures for oversight unclear. One of the more developed models identified was that of the Department of Homeland Security's (DHS) Compliance Review Group (CRG) which reviewed proposed research for compliance with the BWC and US law. Under this system project proposals are reviewed and categorised in four groups:

- In the first category are projects, which neither raise compliance concerns nor fall within the NSABB category of experiments of concern with regard to biosafety.
- In the second category are those experiments that might mistakenly appear to raise such concerns but which do not actually do so.
- In the third category are those research proposals which are considered to represent an issue with compliance with arms control agreements or to fall within the category of NSABB concern
- A fourth category covers projects that are beyond the pale and thus completely prohibited.

The speaker went on to suggest that DHS oversight system represented a useful method for reviewing compliance. The speaker proceeded to propose that these systems could be discussed at a Meeting of States Parties, with the objective of exchanging of best practice on oversight under Article IV of the BWC. This could be supplemented with an exchange on the procedures used in assessments of compliance and a meeting of compliance officers and individuals responsible for oversight, with the intention of preparing written guidelines and summaries with respect to the BWC. The speaker concluded by suggesting that there would be a number of benefits to this approach: it could generate political momentum and reflection amongst States Parties and provide assurances that research was being adequately monitored.

The final speaker discussed the issue of verification and compliance under the BWC. The speaker began with two conceptual points: the first related to what needed to be assessed in terms of compliance and it was pointed out that thinking about compliance-assessment mechanisms for the BTWC requires clarification of what actions constitute compliance or non-compliance. The second point related to the different conceptualisations of terms that were used and it was suggested that there was a semantic swamp with terms viewed differently amongst different individuals. The point being that although the term verification is widely used, there were many different understandings as to what this term means.

¹⁴ Australia, Japan and New Zealand (2011) "Proposal for a working group to address compliance issues"
[http://www.unog.ch/80256EDD006B8954/\(httpAssets\)/E684B9418184AC4FC125792D0037495B/\\$file/Australia+Japan+NZ+working+group+on+compliance.pdf](http://www.unog.ch/80256EDD006B8954/(httpAssets)/E684B9418184AC4FC125792D0037495B/$file/Australia+Japan+NZ+working+group+on+compliance.pdf)

In terms of **verification and compliance**, the speaker noted there had been a number of statements that mentioned verification including from the NAM, the EU and the Russian Federation and there appeared to be a broad consensus this is a useful concept for the Convention. However, the problem was that there were different understandings of what might and should be verified. The speaker went on to identify elements that would be necessary for a verification and compliance system beginning with the question of what database would be necessary. Such a database, it was suggested could be based on that provided by the CBMs, but would need to contain more information than that available in the CBMs. At the other end of the verification and compliance spectrum, it was suggested that there was a need for challenge inspections to look at serious cases of suspected non compliance. Concerning challenge inspections, the UN Secretary General's Investigatory Mechanism already existed, although there would need to be clarification of the relationship between the BWC and this mechanism. A third 'mid-level element' that fell between politically highly charged challenge investigations and day-to-day information monitoring was that of a consultative mechanism. The speaker recalled that this already existed in the form of the consultative mechanism under the BWC's Article V and had been invoked in the past in the *Thrips palmis* investigation.

On the **consultative mechanism**, it was noted that there could well be difficulties in making consultations between States Parties public from the outset and that progress in such consultation requires both States Parties to keep the consultation private as premature publicity can cause problems in making progress on the consultations. In this regard, one participant said that caution was required in considering whether to publicise consultations from the outset, as it could be detrimental if States Parties were to compromise the possibility of quiet resolution by pushing too hard for transparency, something echoed by other participants who suggested in some cases it was more effective to engage in private consultations, rather than following the more aggressive approach of calling for an investigation.

The need for a **conceptual discussion on compliance** was raised by some participants with one suggesting there was a need to work out what was meant by compliance particularly in relation to CBMs and it was proposed that this could be addressed through a working group. One understanding was that compliance should be understood as having someone outside looking in, and there was a need to think about procedures that could support this; with the participant adding that it could be possible to begin to use the existing softer tools, such as a database and the consultancy mechanism to start the discussion. Encouragement to make CBMs publicly available was raised as another route to moving forward on compliance, with one participant suggesting that more attention to oversight could detract from CBMs. In contrast, other participants decoupled CBMs from compliance recalling that CBMs were intended to prevent confusion and ambiguity. Several participants considered that an incremental approach was more suitable and feasible for the BWC.

The issue of **oversight** was also raised again with one participant questioning whether there had been readover into oversight mechanisms in other areas, specifically chemical and nuclear weapons. Two UK examples were identified: the establishment of an independent nuclear weapons safety committee outside of government; and the creation of an independent group to review research programmes in chemistry, which included a medical subcommittee that had evaluated riot control agents to make sure that they are safe. The original Canadian accountability framework proposals were also recalled as an example of a possible model that had not been taken forward.

iv. Achieving universality

The final session began with a presentation on achieving BWC universality in the Pacific region. It was observed that seven Pacific states have neither signed nor ratified the BWC, although the Marshall Islands recently indicated that it would adopt legislation authorizing BWC accession in early 2012. The presenter proceeded to outline some of the challenges to countries in the region and it was said that, whilst none of the states in the region were believed to be opposed to the BWC on political grounds, economic and security issues were a reason for Pacific states' passivity towards the BWC. This was compounded by a lack of capacity to consider, internally promote, adopt and enforce the treaty, particularly when the BW threat was perceived as low when compared with other issues. This was further exacerbated by the very low population numbers and their staggering geographic remoteness from other countries and regions geographically, but also metaphorically, from the BWC meetings in Geneva.

In this regard, it was suggested that a different approach could be useful to encouraging participation and the author cited a recent study, which pointed to four options:

- **wholesale ratification** (decide to join all outstanding treaties in one issue area at once);
- **selective ratification** (make a choice about which are most pressing and relevant);
- **a moratorium on ratification** (a conscious decision in response to being overburdened); and
- **adopting an alternative framework** (such as a regional approach to norm setting, monitoring and enforcement to ensure relevance and reduce overburdening small bureaucracies)

The speaker suggested that 'wholesale ratification' could minimise the overburdening but raised the question of which bundle of treaties the BWC might be packaged with, whilst one fruitful approach could be to link BWC implementation with health and IHR implementation, any attempt to bundle the BWC with unrelated agreements may be more difficult than it is worth. In this regard, elements of an 'alternative framework' were suggested as particularly useful if they supported a regional approach to national implementing legislation or, for example the development of a regional CBM return which might also be expedient for countries in the region. Whatever method was chosen it was suggested that States Parties would need appropriate implementing legislation and tailored assistance. Such agreements should be simple and there should be little expectation of reporting. Indeed, it was suggested these states take their obligations seriously and they will not join if they incur additional costs for engagement or implementation. The speaker concluded with a toolkit for universalization, which included the following mechanisms:

- Universalization contact group
- Special envoy on universalization
- Support and encouragement from trusted partners
- Sponsorship for non-States Parties to attend BWC meetings
- Implementation assistance
- Legislative tools
- Briefing papers for cabinet, parliament, stakeholders

The speaker considered that there were a number of things that could be done relatively easily, such as regional initiatives, or the employment of a special envoy who would commit to working on this issue over a period of time.

The discussion on universalization raised the issue of the WMD Free Zone in the Middle East and it was suggested that a legal perspective would need to be brought to bear, as this could mitigate the extent to which states could engage in meaningful posturing on these issues. Other participants queried what had happened to the work of the Sixth Review Conference on Universalization and pointed out that there was considerable variation in the actions undertaken by the Chairs of intersessional meetings. It was reiterated by one participant that the Seventh Review Conference could develop an initiative that brought in the troika supported by the ISU, which aimed at an interim target of 190 States Parties by the time of the Eighth Review Conference rather than reiterating the exhortations of the past. Other participants queried who would be most suited to get involved proposing that regional actors could be more weighty than external approaches.

Final session

The workshop concluded with expressions of thanks to Professor Jacques Diezi and Professor Jacques Dubochet of the University of Lausanne who had made the local arrangements on behalf of the hosts, the Association Suisse de Pugwash in association with the Geneva International Peace Research Institute GIPRI the Swiss Federal Authorities for supporting the meeting; and the Pugwash CBW Steering Committee and Pugwash International for their role in organising the meeting and to Claudia Vaughan for all the administrative arrangements.

This concluded the workshop, which had fully occupied both days. There was lively discussion throughout and it was evident from the participants that the workshop had provided a valuable opportunity at which all the key issues on which decisions were anticipated at the Seventh Review Conference in 2011 could be discussed and ideas explored and analysed. The workshop was especially timely and valuable as it enabled several of the national experts and representatives participating in the Seventh Review Conference to engage in and further develop the key issues that had emerged from the workshops held around the world in the year and a half prior to the Review Conference.